

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/763,019

DATE: 03/02/2001

TIME: 12:58:15

Input Set : A:\PPD50355 US SEQ LIST.txt  
Output Set: N:\CRF3\03022001\I763019.raw

3 <110> APPLICANT: Evans, Ian  
4 Ray, John  
6 <120> TITLE OF INVENTION: Polynucleotide Sequences  
8 <130> FILE REFERENCE: PPD50355/UST  
C--> 10 <140> CURRENT APPLICATION NUMBER: US/09/763,019  
C--> 11 <141> CURRENT FILING DATE: 2001-02-15  
13 <150> PRIOR APPLICATION NUMBER: GB 9818003.7  
14 <151> PRIOR FILING DATE: 1998-08-18  
16 <150> PRIOR APPLICATION NUMBER: PCT/GB99/02720  
17 <151> PRIOR FILING DATE: 1999-08-17  
19 <160> NUMBER OF SEQ ID NOS: 37  
21 <170> SOFTWARE: PatentIn Ver. 2.1  
23 <210> SEQ ID NO: 1  
24 <211> LENGTH: 399  
25 <212> TYPE: DNA  
26 <213> ORGANISM: Dahlia merckii  
28 <220> FEATURE:  
29 <221> NAME/KEY: CDS  
30 <222> LOCATION: (53)..(388)  
32 <400> SEQUENCE: 1  
33 gtccccggg tcacgaagtt cggcacatct tagcgttatg cataagtcaa aa atg gcc 58  
34 Met Ala  
35 1  
37 aaa aat tca gtt gct ttc ttt gca ttg tgc ctg ctt ctt ttc att ctt 106  
38 Lys Asn Ser Val Ala Phe Phe Ala Leu Cys Leu Leu Phe Ile Leu  
39. 5 10 15  
41 gct atc tca gaa atc aga tcg gtg aag ggg gaa tta tgt gag aag gca 154  
42 Ala Ile Ser Glu Ile Arg Ser Val Lys Gly Glu Leu Cys Glu Lys Ala  
43 20 25 30  
45 agc aag aca tgg tct gga aat tgt ggc aat aca aga cac tgt gat gac 202  
46 Ser Lys Thr Trp Ser Gly Asn Cys Gly Asn Thr Arg His Cys Asp Asp  
47 35 40 45 50  
49 cag tgc aag tct tgg gag ggt gca gcc cat gga gct tgt cac gtg cgc 250  
50 Gln Cys Lys Ser Trp Glu Gly Ala Ala His Gly Ala Cys His Val Arg  
51 55 60 65  
53 ggt ggg aaa cac atg tgc ttc tgc tac ttc aac tgt ccc aaa gcc cag 298  
54 Gly Gly Lys His Met Cys Phe Cys Tyr Phe Asn Cys Pro Lys Ala Gln  
55 70 75 80  
57 aag ttg gct gag gat aaa ctc aga gca gca gag cta gca aag gag aag 346  
58 Lys Leu Ala Glu Asp Lys Leu Arg Ala Ala Glu Leu Ala Lys Glu Lys  
59 85 90 95  
61 aat aat att gga gct gaa aag gtg cct tca gcc aca cct tga 388  
62 Asn Asn Ile Gly Ala Glu Lys Val Pro Ser Ala Thr Pro  
63 100 105 110  
65 gtactaacaa a  
70 <210> SEQ ID NO: 2  
71 <211> LENGTH: 523

ENTERED

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72 <212> TYPE: DNA  
 73 <213> ORGANISM: Dahlia merckii  
 75 <220> FEATURE:  
 76 <221> NAME/KEY: CDS  
 77 <222> LOCATION: (11)..(337)  
 79 <400> SEQUENCE: 2

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81		Met	Ala	Lys	Asn	Ser	Val	Ala	Phe	Leu	Ala	Phe	Leu	Leu			
82		1					5				10						
84	ctt	ttc	gtt	ctt	gct	atc	tca	gaa	atc	gga	tcg	gtg	aag	ggg	gaa	97	
85	Leu	Leu	Phe	Val	Leu	Ala	Ile	Ser	Glu	Ile	Gly	Ser	Val	Lys	Gly	Glu	
86		15					20				25						
88	tta	tgt	gag	aag	gca	agc	aag	aca	tgg	tct	gga	aat	tgt	ggc	aat	aca	145
89	Leu	Cys	Glu	Lys	Ala	Ser	Lys	Thr	Trp	Ser	Gly	Asn	Cys	Gly	Asn	Thr	
90		30					35				40			45			
92	aga	cac	tgt	gat	gac	cag	tgc	aag	tct	tgg	gag	ggc	gca	gcc	cat	gga	193
93	Arg	His	Cys	Asp	Asp	Gln	Cys	Lys	Ser	Trp	Glu	Gly	Ala	Ala	His	Gly	
94							50				55			60			
96	gct	tgt	cac	gtc	cgc	ggt	ggg	aaa	cac	atg	tgc	ttt	tgc	tac	ttc	aac	241
97	Ala	Cys	His	Val	Arg	Gly	Gly	Lys	His	Met	Cys	Phe	Cys	Tyr	Phe	Asn	
98							65				70			75			
100	tgt	tcc	aaa	gcc	cag	aag	ctg	gct	cag	aat	ccc	aaa	gcc	gac	aag	289	
101	Cys	Ser	Lys	Ala	Gln	Lys	Leu	Ala	Gln	Asp	Lys	Leu	Lys	Ala	Asp	Lys	
102							80				85			90			
104	ctc	gcc	aag	gag	aag	agt	gaa	gcc	aag	gtg	cca	gct	aca	cct	tga	337	
105	Leu	Ala	Lys	Glu	Lys	Ser	Glu	Ala	Glu	Lys	Val	Pro	Ala	Thr	Pro		
106							95				100			105			
108	gtactaacaa	gtgttgtatg	attatgaata	aagagaaaaat	gctttcttagt	taccatattt										397	
110	agcattctct	aatgtgtat	gttttgtgct	tttggacta	attgcttaac	tatgattcca										457	
112	gctaataatg	ttttaagtat	ataatataag	ttatcttatt	ttgaaggctg	taaaaaaaaaa										517	
114	aaaaaaa															523	
119	<210>	SEQ ID NO:	3														
120	<211>	LENGTH:	385														
121	<212>	TYPE:	DNA														
122	<213>	ORGANISM:	Dahlia merckii														
124	<220>	FEATURE:															
125	<221>	NAME/KEY:	CDS														
126	<222>	LOCATION:	(24)..(320)														
128	<400>	SEQUENCE:	3														
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130																	
131							1				5			10			
133	ttt	gtc	ctg	ctt	ttc	gtt	ctt	gct	atc	tca	gaa	att	gga	tcg	gtg	101	
134	Phe	Val	Leu	Leu	Phe	Val	Leu	Ala	Ile	Ser	Glu	Ile	Gly	Ser	Val		
135							15				20			25			
137	aag	gga	gaa	tta	tgt	gag	aag	gca	agc	aag	aca	tgg	tct	gga	aat	tgt	149
138	Lys	Gly	Glu	Leu	Cys	Glu	Lys	Ala	Ser	Lys	Thr	Trp	Ser	Gly	Asn	Cys	
139							30				35			40			
141	ggc	atc	aca	tca	cac	tgt	gac	aac	cag	tgc	cgg	tgg	gag	ggt	gca	197	

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Input Set : A:\PPD50355 US SEQ LIST.txt  
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142 Gly Ile Thr Ser His Cys Asp Asn Gln Cys Arg Ser Trp Glu Gly Ala  
143 45 50 55  
144 atc cat gga gct tgt cac gtg cgc ggt ggg aaa cac atg tgc ttc tgc 245  
145 Ile His Gly Ala Cys His Val Arg Gly Gly Lys His Met Cys Phe Cys  
146 60 65 70  
147 75 80 85 90  
148 tac ttc aac tgt tcc aaa gcc gat gag ctc gcg aag gag aag att gaa 293  
149 Tyr Phe Asn Cys Ser Lys Ala Asp Glu Leu Ala Lys Glu Lys Ile Glu  
150 75 80 85 90  
151 95  
152 gcc gaa aag atg cca gcc aca cct tga gtactaacaa atgctatatg 340  
153 Ala Glu Lys Met Pro Ala Thr Pro  
154 95  
155 attataaata aagagaaaat gctttctaaa aaaaaaaaaaaa aaaaaa 385  
156 <210> SEQ ID NO: 4  
157 <211> LENGTH: 577  
158 <212> TYPE: DNA  
159 <213> ORGANISM: Dahlia merckii  
160 <220> FEATURE:  
161 <221> NAME/KEY: CDS  
162 <222> LOCATION: (20)..(346)  
163 <400> SEQUENCE: 4  
164 ggcacgagcc tattaaaaaa atg gtg aat cga tcg gtt gct ttc tcc gtg ttc 52  
165 Met Val Asn Arg Ser Val Ala Phe Ser Val Phe  
166 1 5 10  
167 gtt ctg atc ctt ttc gtg ctc gcc atc tca gat atc aca agt gtg aga 100  
168 Val Leu Ile Leu Phe Val Leu Ala Ile Ser Asp Ile Thr Ser Val Arg  
169 15 20 25  
170 gga gaa gta tgc gag aaa gct agc aag aca tgg tca gga aac tgt ggc 148  
171 Gly Glu Val Cys Glu Lys Ala Ser Lys Thr Trp Ser Gly Asn Cys Gly  
172 30 35 40  
173 aac acg gga cac tgt gac aac caa tgt aaa tac tgg gag ggg ggc gcc 196  
174 Asn Thr Gly His Cys Asp Asn Gln Cys Lys Tyr Trp Glu Gly Ala Ala  
175 45 50 55  
176 cat ggg gcg tgc cac gtg cgt gga ggg aaa cac atg tgt ttc tgc tac 244  
177 His Gly Ala Cys His Val Arg Gly Gly Lys His Met Cys Phe Cys Tyr  
178 60 65 70 75  
179 ttc aag tgt ccc aaa gcc gaa aag ctt gct caa gac aaa gtt aat gcc 292  
180 Phe Lys Cys Pro Lys Ala Glu Lys Leu Ala Gln Asp Lys Val Asn Ala  
181 80 85 90  
182 caa gag ctt gac cgt gat gcc aag aaa gtg att ccg aac gtt gaa cat 340  
183 Gln Glu Leu Asp Arg Asp Ala Lys Lys Val Ile Pro Asn Val Glu His  
184 95 100 105  
185 ccg tga aagggtcggt ttcttaat agaaagtctt agattacgaa tgcgataaac 396  
186 Pro  
187 tatagaaaat gtttgctaaa tgtcacatta taattagaac tttatgattt ttgtcaatag 456  
188 ggcattttct ttttagtgtat atgtgtataa aggtgtatgtctt ttatgtctt tcgtgcgtaa 516  
189 206 gagtttcga ctatgtgtaa taaagaaagg gtctttttt ttaaaaaaaaaaa aaaaaaaaaaaa 576  
190 a  
191 577  
192 <210> SEQ ID NO: 5  
193 <211> LENGTH: 446

## RAW SEQUENCE LISTING

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215 <212> TYPE: DNA  
216 <213> ORGANISM: Dahlia merckii  
218 <400> SEQUENCE: 5  
219 atggtaatc ggtcggttgc gttctccgct tcgttctga tcctttcgt gctcgccatc 60  
220 tcaggattatc aaatctttatc ttcatatttataatc gaatatgata gtatttatat tcttttatgg 120  
221 ttttatgtgt tctgacaatgtt gagtagatat cgcacatccgtt agtggagaac 180  
222 tatgcgagaa agctagcaag acatggtcgg gaaactgtgg caatacggga cattgtgaca 240  
223 accaatgtaa atcatgggag ggtcggttgc atggagcgtt tcatgtgcgt aacgggaaac 300  
224 acatgtgttt ctgttacttc aattgtaaaaa aagccgaaaaa gcttgctcaa gacaaactta 360  
225 aagccgaaca actcgctcaa gacaaactta atgcccaaaaa gcttgaccgt gatgccaaga 420  
226 aagtggttcc aaacgttgaa catccg 446  
229 <210> SEQ ID NO: 6  
230 <211> LENGTH: 150  
231 <212> TYPE: DNA  
232 <213> ORGANISM: Dahlia merckii  
234 <400> SEQUENCE: 6  
235 gagctttgcg agaaggcttc taagacttgg tctggaaact gcggaaacac tggacattgc 60  
236 gataaccaat gcaagtcttgg ggaggagct gctcatggag cttgccatgt tagaaacgga 120  
237 aagcatatgt gcttctgtca cttcaactgc 150  
240 <210> SEQ ID NO: 7  
241 <211> LENGTH: 60  
242 <212> TYPE: DNA  
243 <213> ORGANISM: Dahlia merckii  
245 <400> SEQUENCE: 7  
246 gaggtttgcg agaaggcttc taagacttgg tctggaaact gcggaaacac tggacattgc 60  
248 <210> SEQ ID NO: 8  
249 <211> LENGTH: 111  
250 <212> TYPE: PRT  
251 <213> ORGANISM: Dahlia merckii  
253 <400> SEQUENCE: 8  
254 Met Ala Lys Asn Ser Val Ala Phe Phe Ala Leu Cys Leu Leu Leu Phe  
255 1 5 10 15  
257 Ile Leu Ala Ile Ser Glu Ile Arg Ser Val Lys Gly Glu Leu Cys Glu  
258 20 25 30  
260 Lys Ala Ser Lys Thr Trp Ser Gly Asn Cys Gly Asn Thr Arg His Cys  
261 35 40 45  
263 Asp Asp Gln Cys Lys Ser Trp Glu Gly Ala Ala His Gly Ala Cys His  
264 50 55 60  
266 Val Arg Gly Gly Lys His Met Cys Phe Cys Tyr Phe Asn Cys Pro Lys  
267 65 70 75 80  
269 Ala Gln Lys Leu Ala Glu Asp Lys Leu Arg Ala Ala Glu Leu Ala Lys  
270 85 90 95  
272 Glu Lys Asn Asn Ile Gly Ala Glu Lys Val Pro Ser Ala Thr Pro  
273 100 105 110  
276 <210> SEQ ID NO: 9  
277 <211> LENGTH: 108  
278 <212> TYPE: PRT  
279 <213> ORGANISM: Dahlia merckii  
281 <400> SEQUENCE: 9

RAW SEQUENCE LISTING  
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Input Set : A:\PPD50355 US SEQ LIST.txt  
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282 Met Ala Lys Asn Ser Val Ala Phe Leu Ala Phe Leu Leu Leu Phe
283      1          5          10          15
285 Val Leu Ala Ile Ser Glu Ile Gly Ser Val Lys Gly Glu Leu Cys Glu
286      20         25          30
288 Lys Ala Ser Lys Thr Trp Ser Gly Asn Cys Gly Asn Thr Arg His Cys
289      35         40          45
291 Asp Asp Gln Cys Lys Ser Trp Glu Gly Ala Ala His Gly Ala Cys His
292      50         55          60
294 Val Arg Gly Gly Lys His Met Cys Phe Cys Tyr Phe Asn Cys Ser Lys
295      65         70          75          80
297 Ala Gln Lys Leu Ala Gln Asp Lys Leu Lys Ala Asp Lys Leu Ala Lys
298      85         90          95
300 Glu Lys Ser Glu Ala Glu Lys Val Pro Ala Thr Pro
301      100        105
304 <210> SEQ ID NO: 10
305 <211> LENGTH: 98
306 <212> TYPE: PRT
307 <213> ORGANISM: Dahlia merckii
309 <400> SEQUENCE: 10
310 Met Ala Lys Asn Ser Val Ala Phe Phe Ala Phe Val Leu Leu Leu Phe
311      1          5          10          15
313 Val Leu Ala Ile Ser Glu Ile Gly Ser Val Lys Gly Glu Leu Cys Glu
314      20         25          30
316 Lys Ala Ser Lys Thr Trp Ser Gly Asn Cys Gly Ile Thr Ser His Cys
317      35         40          45
319 Asp Asn Gln Cys Arg Ser Trp Glu Gly Ala Ile His Gly Ala Cys His
320      50         55          60
322 Val Arg Gly Gly Lys His Met Cys Phe Cys Tyr Phe Asn Cys Ser Lys
323      65         70          75          80
325 Ala Asp Glu Leu Ala Lys Glu Lys Ile Glu Ala Glu Lys Met Pro Ala
326      85         90          95
328 Thr Pro
331 <210> SEQ ID NO: 11
332 <211> LENGTH: 108
333 <212> TYPE: PRT
334 <213> ORGANISM: Dahlia merckii
336 <400> SEQUENCE: 11
337 Met Val Asn Arg Ser Val Ala Phe Ser Val Phe Val Leu Ile Leu Phe
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340 Val Leu Ala Ile Ser Asp Ile Thr Ser Val Arg Gly Glu Val Cys Glu
341      20         25          30
343 Lys Ala Ser Lys Thr Trp Ser Gly Asn Cys Gly Asn Thr Gly His Cys
344      35         40          45
346 Asp Asn Gln Cys Lys Tyr Trp Glu Gly Ala Ala His Gly Ala Cys His
347      50         55          60
349 Val Arg Gly Gly Lys His Met Cys Phe Cys Tyr Phe Lys Cys Pro Lys
350      65         70          75          80
352 Ala Glu Lys Leu Ala Gln Asp Lys Val Asn Ala Gln Glu Leu Asp Arg
353      85         90          95

```

FYI

**Please Note:**

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

VERIFICATION SUMMARY  
PATENT APPLICATION: US/09/763,019

DATE: 03/02/2001  
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Input Set : A:\PPD50355 US SEQ LIST.txt  
Output Set: N:\CRF3\03022001\I763019.raw

L:10 M:270 C: Current Application Number differs, Replaced Application Number  
L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date  
L:461 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17  
L:523 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20  
L:551 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21  
L:579 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22